ATENT

Docket No.: 064693-0074

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Application of

Customer Number: 33401

MARMARELIS, VASILIS Z., et al.

Confirmation Number: 4072

Serial No.: 10/623,426

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: Not known

For:

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

**SYSTEMS** 

**CERTIFICATE OF MAILING UNDER CFR 1.08** 

I hereby certify that that on September 4, 2005, this correspondence is being deposited with the United States Postal Service as First Class Mail under 37 CFR 1.8(a) in an envelope addressed to Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-

1450.

Jessica Broy

AMENDMENT, PETITION AND FEE TO ADD INVENTOR UNDER 37 CFR 1.48

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

**PETITION** 

Assignee petitions the Commissioner to correct the inventorship of the above-identified patent application in all appropriate records of the U.S. Patent and Trademark Office.

#### **AMENDMENT**

Please amend the records for the above-identified application to jointly name all of the following three inventors (one of whom is newly added):

10/03/2005 YPOLITE1 00000068 501946 10623426

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LAS99 1411567-1.064693.0074

Serial No.: 10/623,426 Customer No. 33401

Vasilis Z. Marmarelis;

Ramez Emile Necola Shehada; and

Tae-Seong Kim

# **REMARKS**

This application was originally filed in the names of Vasilis Z. Marmarelis and Tae-Seong Kim. Applicants are requesting amendment of the records to add one more joint inventor, Ramez Emile Necola Shehada.

As shown by the attached Statement by the added inventor, Dr. Shehada believes he is a joint inventor of the subject matter claimed in this application but was omitted from the list of inventors on the filing papers through no deceptive intent on his part. As shown by the attached Statements of Marmarelis and Kim, Dr. Shehada is a joint inventor of the subject matter claimed in this application but was omitted from the list of inventors on the filing papers through no deceptive intent on their parts.

All three of the inventors have executed a new Declaration in compliance with 37 CFR 1.63, which is filed herewith.

The originally named inventors assigned the application to Alfred E. Mann Institute for Biomedical Engineering at the University of Southern California, as shown by the assignment recorded in the U.S. Patent and Trademark Office (Reel 014764 Frame 0636). The Assignee's Consent is also attached.

The Commissioner is hereby authorized to charge the Petition Fee of \$130.00 (37 CFR 1.17(i)) to Deposit Account 501946.

Serial No.: 10/623,426 Customer No. 33401

Applicants submit that the Petition and accompanying documentation satisfies all requirements for correction of inventorship under 37 CFR 1.48(a). An early consideration and grant of this Petition, we well as a prompt entry of the amendment of the inventorship on the Patent, are earnestly solicited.

Respectfully submitted,

MCDERMOTA WILL & EMERY LLP

Marc E. Brown

Registration No. 28,590

2049 Century Park East, Suite 3400 Los Angeles, California 90067

Phone: (310-788-4125

Fax: (310) 277-4730

Date: September 27, 2005

Docket No.: 064693-0074

**PATENT** 

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

SEP 8 0 2005 re Application of:

RMARELIS ET AL.

Serial No.: 10/623,426

Filed: July 18, 2003

Oustomer Number: 33401

Confirmation Number: 4072

Group Art Unit: 3737

Examiner: IMAM, ALI M

For: Optimization of Excitation Waveform for Nonlinear Transmit-Receive Systems

CERTIFICATE OF MAILING (37 CFR. § 1.8(a))

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail as First Class Mail under 37 CFR 1.8(a) in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-

Jessica Brown

# AMENDMENT AND RESPONSE TO OFFICE ACTION

# **MAILED MAY 6, 2005**

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

This is in response to the Office Action, mailed May 6, 2005.

Amendments to the claims begin on page 2 of this paper. Remarks begin on page 7 of this paper.

A petition for a two-month extension of time is being filed contemporaneously herewith. An Amendment, Petition and Fee to Add Inventor Under 37 CFR 1.48 is also being filed contemporaneously herewith (copy enclosed).



COPY

### **Amendments to Claims**

Claims 1-31 are pending in the application. The Examiner has allowed claims 1-28, and has rejected claims 29-31 under 35 U.S.C. § 112. Please amend independent claim 29, as follows:

1. (Original) A process for optimizing the excitation waveform that is delivered to an ultrasonic transmitter that, together with an ultrasonic receiver, form part of a nonlinear ultrasonic transmission and reception system comprising:

delivering a transmission test signal to the ultrasonic transmitter;

generating a received test signal from the ultrasonic receiver that is a nonlinear function of the transmission test signal;

developing a nonlinear model of the nonlinear function from the transmission test signal and the received test signal; and

determining an optimum excitation signal for the ultrasonic transmitter that substantially maximizes the signal generated by the ultrasonic receiver based on the model and based on a specified constraint on the excitation signal.

- 2. (Original) The process of Claim 1 wherein developing the nonlinear model includes determining kernel functions of the nonlinear function.
- 3. (Original) The process of Claim 2 wherein an algorithm is used in determining the kernel functions.
- 4. (Original) The process of Claim 2 wherein developing the nonlinear model includes determining principal dynamic modes of the nonlinear function based on the kernel functions.
- 5. (Original) The process of Claim 4 wherein determining an optimum excitation signal includes calculating the time inversion of one or more of the principal dynamic modes.

- 6. (Original) The process of Claim 5 wherein one or more of the kernel functions are excluded when calculating the time inversion.
- 7. (Original) The process of Claim 1 wherein developing the nonlinear model includes determining principal dynamic modes of the nonlinear function.
- 8. (Original) The process of Claim 1 wherein a Laguerre-Volterra network is used in developing the nonlinear model.
- 9. (Original) The process of Claim 8 wherein parameters of the Laguerre-Volterra network are adjusted to minimize the mean-squared error between the signal predicted by the network and the received test signal.
- 10. (Original) The process of Claim 9 wherein the adjustment is an iterative process.
- 11. (Original) The process of Claim 1 wherein the nonlinear model includes a linear filter followed by a static nonlinearity.
- 12. (Original) The process of Claim 1 wherein the specified constraint on the excitation signal includes a constraint on the amplitude of the excitation signal.
- 13. (Original) The process of Claim 1 wherein the specified constraint on the excitation signal includes a constraint on the power of the excitation signal
- 14. (Original) The process of Claim 1 wherein determining an optimum excitation signal maximizes the amplitude of the signal generated by the ultrasonic receiver.
- 15. (Original) The process of Claim 1 wherein determining an optimum excitation maximizes the power of the signal generated by the ultrasonic receiver.



- 16. (Original) The process of Claim 1 wherein the transmission test signal is a wideband signal.
- 17. (Original) The process of Claim 16 wherein the wideband signal covers the bandwidth over which the transmission and reception system is configured to operate.
- 18. (Original) The process of Claim 16 wherein the wideband signal is white noise.
- 19. (Original) The process of Claim 16 wherein the wideband signal is a chirp.
- 20. (Original) The process of Claim 1 wherein the transmission test signal covers a dynamic range.
- 21. (Original) The process of Claim 20 wherein the dynamic range is the dynamic range over which the transmission and reception system is configured to operate.
- 22. (Original) The process of Claim 1 further comprising exciting the ultrasonic transmitter with the optimum excitation signal.
- 23. (Original) The process of Claim 22 wherein a breast is placed between the ultrasonic transmitter and the ultrasonic receiver while exciting the ultrasonic transmitter with the optimum excitation signal.
- 24. (Original) The process of Claim 23 wherein the signal received by the ultrasonic receiver in response to the optimum excitation signal is analyzed to create an image of the breast.
- 25. (Original) An ultrasonic imaging system for generating an image of tissue comprising:



an ultrasonic transmitter that converts an excitation signal into an ultrasonic signal;

an ultrasonic receiver positioned to receive the ultrasonic signal transmitted by the ultrasonic transmitter and that generates a received signal that is a nonlinear function of the excitation signal;

an excitation signal generator in communication with the ultrasonic transmitter that generates an excitation signal that substantially maximizes the signal generated by the ultrasonic receiver based on a specified constraint on the excitation signal; and

a processing system in communication with the ultrasonic receiver for processing the signal generated by the ultrasonic receiver into an image of tissue disposed between the ultrasonic transmitter and ultrasonic receiver.

- 26. (Original) The system of Claim 25 wherein the signal generated by the excitation signal generator is derived from a nonlinear model of the nonlinear function.
- 27. (Original) The system of Claim 26 wherein the nonlinear model is developed from a comparison of a transmitted test signal transmitted by the ultrasonic transmitter and a received test signal generated by the ultrasonic receiver.
- 28. (Original) A process for optimizing the excitation waveform that is delivered to a transmitter that, together with a receiver, form part of a nonlinear transmission and reception system comprising:

delivering a transmission test signal to the transmitter;

generating a received test signal from the receiver that is a nonlinear function of the transmission test signal:



developing a nonlinear model of the nonlinear function from the transmission test signal and the received test signal; and

determining an optimum excitation signal for the transmitter that substantially maximizes the signal generated by the receiver based on the model and based on a specified constraint on the excitation signal.

29. (Currently Amended) A nonlinear transmission and reception system comprising:

a transmitter that converts an excitation signal into a transmitted signal;

a receiver positioned to receive the transmitted signal and that generates a received signal that is a nonlinear function of the excitation signal; and

an excitation signal generator in communication with the transmitter that generates an excitation signal that substantially maximizes the signal generated by the ultrasonic receiver based on a specified constraint on the excitation signal.

- 30. (Original) The system of Claim 29 wherein the signal generated by the excitation signal generator is derived from a nonlinear model of the nonlinear function.
- 31. (Original) The system of Claim 30 wherein the nonlinear model is developed from a comparison of a transmitted test signal transmitted by the transmitter and a received test signal generated by the receiver.



# **REMARKS**

At the time of the Office Action, Claims 1-31 were pending. The Examiner allowed claims 1-28, and rejected claims 29-31 for an error in form under 35 U.S.C. §112. The Examiner stated that claims 29-31 would be allowable if rewritten in proper form to correct the lack of sufficient antecedent basis of a limitation in independent claim 29.

Independent claim 29 has been rewritten in proper form, and is now in condition for allowance. Consequently, dependent claims 30-31, which depend upon claim 29, are also in condition for allowance. Therefore, this case is now in condition for allowance and early notice of the same is earnestly requested.

# CONCLUSION

For all the above reasons, Assignee submits that the application is in condition for allowance, which action it respectfully solicits.

Assignee believes that no extension of time is required. However, to the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 501946, please credit any excess fees to such deposit account and please reference attorney docket number 64693-074.

Respectfully submitted,
McDERMOTT WILL & EMERY LLP

Marc E. Brown, Registration No. 28,590

2049 Century Park East Suite 3400 Los Angeles, California 90067 Date: September <u>27</u>, 2005 Telephone: (310) 277-4110

Facsimile: (310) 277-4730



Serial No.: 10/623,426 Customer No. 33401

Docket No.: 064693-0074 PATENT



# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of

Customer Number: 33401

MARMARELIS, VASILIS Z., et al.

Serial No.: 10/623,426

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: Not known

For: OPTIMIZA SYSTEMS

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

# ASSENT OF ASSIGNEE TO CORRECTION AND/OR ADDITION TO ORIGINAL NAMED INVENTOR(S)

Commissioner for Patents Washington, DC 20231

Sir:

| Alfred    | E. Mann Insti | tute for Biomedical Engineering at the University of Southern California |
|-----------|---------------|--|
|           |               | (type or print name of assignee)   |
| 1042 E    | Downey Way I  | ORB B21  |
|           | •             | (address)  |
| Los Ar    | ngeles, CA 90 | 0089-1112  |
|           |               |  |
|           | •             |  |
| Assign    | ıment.        |  |
| Assign    | miciit.       |  |
| $\bowtie$ | recorded on   | June 22, 2004 from Vasilis Z. Marmarelis and Tae-Seong Kim               |
|           |               | <del></del>  |
|           | Reel          | 014764   |
|           | Frame         | 0636   |
|           |               |  |
|           | record        | ded herewith   |
|           | ⊠ lecoit      | icu nerewitti  |

hereby assents to the correction of inventorship filed

| $\boxtimes$ | herewith |      |      |      |
|-------------|----------|------|------|------|
|             | on       | <br> | <br> | <br> |

A separate "ASSIGNMENT" (DOCUMENT) COVER SHEET on behalf

of Ramez Emile Necola Shehada

 $\boxtimes$ 

Serial No.: 10/623,426 Customer No. 33401

#### **ASSIGNEE CERTIFICATION**

In accordance with 37 CFR 3.73, the assignee hereby certifies that the evidentiary documents with respect to its ownership have been reviewed and that, to the best of the assignee's knowledge and belief, title is in the assignee seeking to take this action.

Petu Shullann 9/

Peter Staudhammer, Ph.D, Director

Name and title of person authorized to sign on behalf of assignee

Docket No.: 64693-074

#### ASSIGNMENT

WHEREAS, I, Ramez Emile Necola Shehada, ("ASSIGNOR") have invented "OPTIMIZATION OF EXCITATION WAVEFORM FOR NONLINEAR TRANSMIT-RECEIVE SYSTEMS" ("Invention") have invented certain new and useful improvements disclosed in an application for United States Patent Application Serial No. 10/623,426, filed July 18, 2003;

WHEREAS, I am a joint inventor of the Invention;

WHEREAS, Alfred E. Mann Institute for Biomedical Engineering at the University of Southern California, ("ASSIGNEE") is a corporation organized and existing under the laws of Delaware USA, having a place of business at 1042 Downey Way, DRB B21, Los Angeles, CA 90089-1112.

WHEREAS, ASSIGNEE desires to acquire the entire right, title and interest in and to

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for valuable consideration, the receipt and legal sufficiency of the consideration and the considera

- 1. The Invention;
- 2. The Application;
- 3. All applications based on or claiming priority from the Application, including all divisionals and continuations ("Application Family");
- 4. All patents which may be granted on the Invention, Application and Application Family by the United States of America, its territories and possessions, and by all foreign countries, including all priority rights and all reissues thereof ("Patents"); and
- 5. The right to sue for past infringement of the Invention, Application, Application Family and Patents.

ASSIGNOR agree, at the request of ASSIGNEE, to sign any and all papers reasonably needed to file and prosecute the Application and Application Family, to obtain the Patents, and to perfect and vest in ASSIGNEE the entire right, title and interest in the Invention, Application, Application Family and Patents. ASSIGNOR also agree to provide assistance that is reasonably needed to prepare and prosecute the Application and Application Family.

ASSIGNOR authorize and empower ASSIGNEE, its successors and assigns, to apply for and obtain, in its own name, the Application, Application Family and Patents before competent International Authorities, including the World Intellectual Property Organization and in any and all foreign countries in which applications for patents can be made or patents obtained.

| Dated: 9/19 , 2005  | Name: Ramez Emile Necola Shehada Address: 14759 Hardaway Drive La Mirada, California 90638-3030   |
|---|---|
| STATE OF CALIFORNIA )   |   |
| ) ss.<br>COUNTY OF LOS ANGELES )  |   |
| Necola Shehada, personally known to evidence) to be the person(s) whose namacknowledged to me that he/she/they except the she/she/they except the she/she/they except the she/they except | personally appeared Ramez Emile me or proved to me on the basis of satisfactory e(s) is/are subscribed to the within instrument and cuted the same in his/her/their authorized capacity(ies), the instrument, the person(s), or the entity upon behalf of instrument. |
| WITNESS my hand and official seal.  When a Dela Gazza  Notary Public  | (SEAL)  MARIA G. DE LA GARZA Commission # 1866224 Notary Public - Californio Los Angeles County My Comm. Expires Apr 1, 2009  |

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Customer Number: 33401

MARMARELIS, VASILIS Z., cf

Serial No.: 10/623,426

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: Not known

For:

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

**SYSTEMS** 

I, TAE-SEONG KIM, hereby affirm that I am a joint inventor of the above-referenced application, together with Ramez Emile Necola Shehada and Vasilis Z. Marmarelis and that the error in inventorship occurred without deceptive intention on my part on or about the time of the actual filing of the referenced application.

Tae-Seong Kim

Date:



Docket No.: 064693-0074 PATENT

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Customer Number: 33401

MARMARELIS, VASILIS Z., et al.

Serial No.: 10/623,426

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: Not known

For:

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

**SYSTEMS** 

I, VASILIS Z. MARMARELIS, hereby affirm that I am a joint inventor of the abovereferenced application, together with Ramez Emile Necola Shehada and Tae-Seong Kim and that the error in inventorship occurred without deceptive intention on my part on or about the time of the actual filing of the referenced application.

acilis 7 Marmarelis

Date

LAS99 1411625-1.064693.0074



**PATENT** 

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Customer Number: 33401

MARMARELIS, VASILIS Z., et al.

Serial No.: 10/623,426

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: Not known

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

**SYSTEMS** 

I, RAMEZ EMILE NECOLA SHEHADA, hereby affirm that I am a joint inventor of the above-referenced application, together with Vasilis Z. Marmarelis and Tae-Seong Kim and that the error in inventorship occurred without deceptive intention on or about the time of the actual filing of the referenced application.

Ramez Emile Necola Shehada

Ramez Emile Necola Shehada

Date: 7/23/2005



**DECLARATION AND PETITION** 

As a below named inventors we hereby declare that:

Our residence, post office addresses and citizenship are as stated below next to our names.

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled "OPTIMIZATION OF EXCITATION WAVEFORM FOR NONLINEAR TRANSMIT-RECEIVE SYSTEMS," the specification of which is Application Serial No. 10/623,426, filed July 18, 2003.

We hereby state that we have reviewed and understand the contents of the above identified specification, including the claims.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with 37 C.F.R. § 1.56(a).

We hereby claim foreign priority benefits under 35 U.S.C. § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application of which priority is claimed.

# PRIOR FOREIGN APPLICATION(S)

Number NONE Country

Filing Date

**Priority Claimed?** 

# PRIOR UNITED STATES APPLICATION(S)

We hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of 35 U.S.C. § 112, we acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Serial No.

**Filing Date** 

Status

## PRIOR UNITED STATES PROVISIONAL APPLICATION

We hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Serial No. 60/397,378

Filing Date
July 19, 2002

**Status** Provisional

We hereby declare: All statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true. These statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Wherefore we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, and we hereby subscribe our names to the foregoing specification and claims, declaration, and this petition.

| Full name of first inv  | enton Vasilis Z. Marmarelis              |         |   |  |
|-------------------------|--|---------|---|--|
| Inventor's signature    | Manyoreta                                | _ Date_ | 7/22/05                                 |  |
| Residence:              | Rancho Palos Verdes, California          |         | •                                       |  |
| Citizenship:            | United States of America                 |         |   |  |
| Post Office Address     | 37 Headland Drive                        |         |   |  |
|                         | Rancho Palos Verdes, California 90275-51 | 17      |   |  |
| Full name of second i   | nventor Ramez Emile Necola Shehada       |         |   |  |
| Inventor's signature    |  | _ Date_ | <del></del>                             |  |
| Residence:              | La Mirada, California                    |         |   |  |
| Citizenship:            | United States of America                 |         |   |  |
| Post Office Address     | 14759 Hardaway Drive                     |         |   |  |
|                         | La Mirada, California 90638-3030         |         |   |  |
| Full name of third in   | ventor Tae-Seong Kim                     |         |   |  |
| Inventor's signature Da |  | Date_   | - · · · · · · · · · · · · · · · · · · · |  |
| Residence:              | Fullerton, California                    |         |   |  |
| Citizenship:            | Republic of Korea                        |         |   |  |
| Post Office Address     | 3097 Primrose Lane                       |         |   |  |

Fullerton, California, USA 92833

fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Wherefore we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, and we hereby subscribe our names to the foregoing specification and claims, declaration, and this petition.

# Full name of first inventor Vasilis Z. Marmarelis

| Inventor's signature   |  | Date           |
|------------------------|--|----------------|
| Residence:             | Rancho Palos Verdes, California            |                |
| Citizenship:           | United States of America                   |                |
| Post Office Address    | 37 Headland Drive                          |                |
|                        | Rancho Palos Verdes, California 90275-5117 | 7              |
| ,                      | inventor Ramez Emile Necola Shehada        |                |
| Inventor's signature k | amez Emile Necla Shehada                   | Date 7/23/2005 |
| Residence:             | La Mirada, California                      |                |
| Citizenship:           | United States of America                   |                |
| Post Office Address    | 14759 Hardaway Drive                       |                |
|                        | La Mirada, California 90638-3030           |                |
| Full name of third in  | ventor Tae-Seong Kim                       |                |
| Inventor's signature_  | · · · · · · · · · · · · · · · · · · ·      | Date           |
| Residence:             | Fullerton, California                      |                |
| Citizenship:           | Republic of Korea                          |                |
| Post Office Address    | 3097 Primrose Lane                         | 2.9            |
|                        | Fullerton, California, USA 92833           |                |

64693-074

fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Wherefore we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, and we hereby subscribe our names to the foregoing specification and claims, declaration, and this petition.

# Full name of first inventor Vasilis Z. Marmarelis

| lnventor's signature_ |   | Date_ |           |
|-----------------------|---|-------|-----------|
| Residence:            | Rancho Palos Verdes, California         |       |           |
| Citizenship:          | United States of America                |       |           |
| Post Office Address   | 37 Headland Drive                       |       |           |
|                       | Rancho Palos Verdes, California 90275-5 | 117   |           |
| Full name of second   | inventor Ramez Emile Necola Shehada     |       |           |
| Inventor's signature_ | 777-18°-47-1-7-                         | Date_ |           |
| Residence:            | La Mirada, California                   |       |           |
| Citizenship:          | United States of America                |       |           |
| Post Office Address   | 14759 Hardaway Drive                    |       |           |
|                       | La Mirada, California 90638-3030        |       |           |
| Full name of third in | ventor Tae-Seong Kim                    |       | ,         |
| Inventor's signature_ | 1him, Tanseren                          | Date_ | 07/22/0/- |
| Residence:            | Brea, California                        |       | / ′       |
| Citizenship:          | Republic of Korea                       |       | •         |
| Post Office Address   | 205 S. Poplar Ave                       |       |           |

Brea, California, USA 92821

Docket No.: 064693-0074

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

SEP 8 0 2005 3

In re Application of

Customer Number: 33401

ÉHADA, RAMEZ EMILE NECOLA

. .

Confirmation Number: 4072

**PATENT** 

et al.

Application No.: 10/623,426

1600 406

Group Art Unit: 3737

Filed: July 18, 2003

Examiner: IMAM, Ali M.

For:

OPTIMIZATION OF THE EXCITATION WAVEFORM FOR TRANSMIT-RECEIVE

SYSTEMS

CERTIFICATE OF MAILING (37 CFR. § 1.8(a))

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail as First Class Mail under 37 CFR 1.8(a) in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on Sep 27:2005.

Jessica Brown

# PETITION FOR EXTENSION OF TIME

Mail Stop AMENDMENT Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

It is respectfully requested that the time for response to the Office Action dated May 6, 2005, now due to expire August 6, 2005, be extended for two month(s) and set to expire on October 6, 2005.

Please charge the extension fee of \$225.00 to Deposit Account No. 501946. Please charge any additional fees or credit any overpayment to Deposit Account No. 501946.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Marc E. Brown, Registration No. 28,590 Please recognize our Customer No. 33401 as our correspondence address.

2049 Century Park East, 34th Floor

Los Angeles, CA 90067 Phone: (310) 277-4110

Facsimile: (310) 277-4730

Date: September 27, 2005

COPY

LAS99 1421039-1.064693.0074